



---

***Yuvarakesh Vadlamudi:***

*Color Segmentation based on Face Detection for Picture Enhancement in Digital TV*

## Description

This thesis deals with one of the very interesting applications of human face detection, the image quality enhancement in Digital TV (DTV). In this application, the aim of face detection is to identify all the skin-like regions present in the current frame with the help of extracted face regions. Then, by boosting the identified skin regions, the image quality is improved.

The first part of the thesis includes researching the state-of-the-art face detection algorithms and selecting the best suitable algorithm based on performance metrics and the demand for various resources. Secondly, the selected algorithm is implemented and evaluated on Wireless Smart Camera (WiCa) platform which aims at high imaging performance at low power consumption. The platform was developed at NXP Semiconductors in Eindhoven, where the practical part of this thesis is carried. WiCa is a research platform, incorporating on-board video processing and Zigbee-based wireless communication. As a third part of thesis, a face tracking algorithm has been implemented and evaluated to increase the robustness of current face detection system.

## Advisor

Prof. Bernhard Rinner | Dipl.-Ing. Wolfgang Schriebl